

REMARKS

Claims 1-3, 6-7 and 12-14 are pending for further examination. Claims 4-5 and 8-11 were withdrawn as the result of a restriction requirement.

In the Office action, the pending claims were rejected under 35 U.S.C. § 103 as unpatentable over U.S. Published Application 2001/0019648 (Nobuhara et al.) in view of U.S. Patent no. 6,273,620 (Kato et al.). As discussed below, applicant respectfully requests reconsideration.

The Law of Obviousness

A claimed invention is unpatentable due to obviousness if the differences between it and the prior art “are such that the subject matter as a whole would have been obvious at the time the invention was made to a person of ordinary skill in the art.” 35 U.S.C. § 103(a).

As discussed by the Court of Appeals for the Federal Circuit, a proper conclusion of obviousness under 35 U.S.C. § 103 requires that there be some motivation that suggests the claimed invention as a whole:

[A]n Examiner may often find every element of a claimed invention in the prior art. If identification of each claimed element in the prior art were sufficient to negate patentability, very few patents would ever issue. Furthermore, rejecting patents solely by finding prior art corollaries for the claimed elements would permit an examiner to use the claimed invention itself as a blueprint for piecing together elements in the prior art to defeat the patentability of the claimed invention. Such an approach would be “an illogical and inappropriate process by which to determine patentability.” [Citations omitted] To prevent the use of hindsight based on the invention to defeat patentability of the invention, this court requires the examiner to show motivation to combine the references that create the case of obviousness.

In re Rouffet, 149 F.3d 1350, 1357; 47 USPQ2d 1453, 1457-1458 (Fed. Cir. 1998). As further explained by the Federal Circuit:

Our case law makes clear that the best defense against hindsight-based obviousness analysis is the rigorous application of the requirement for a showing of a teaching or motivation to combine the prior art references. See Dembiczak, 175 F.3d at 999, 50 USPQ2d at 1617. “Combining prior art references without evidence of such a suggestion, teaching, or motivation simply takes the inventor’s disclosure as a blueprint for piecing together the prior art to defeat patentability--the essence of hindsight.” Id.

“When a rejection depends on a combination of prior art references, there must be some teaching, suggestion, or motivation to combine the references.” In re Rouffet, 149 F.3d 1350, 1355, 47 USPQ2d 1453, 1456 (Fed. Cir. 1998) (citing In re Geiger, 815 F.2d 686, 688, 2 USPQ2d 1276, 1278 (Fed. Cir. 1987)).

Ecolochem, Inc. v. Southern California Edison Co., 56 USPQ2d 1065, 1072-73 (Fed. Cir. 2000).

In addition, the showing of the motivation to combine must be “clear and particular.” *See, e.g., C.R. Bard, Inc. v. M3 Sys., Inc.*, 157 F.3d 1340, 1352, 48 USPQ2d 1225, 1232 (Fed. Cir. 1998); *Teleflex, Inc. v. Ficosa North Am. Corp.*, 63 USPQ2d 1374 at 1387 (Fed. Cir. 2002).

The pending claims are patentable over the cited references

In the present case, as discussed below, there is no clear and particular motivation to combine the cited references to obtain the claimed subject matter.

The Nobuhara published application discloses various embodiments of optical modules that include a ferrule assembly 16 and a planar lightwave circuit (PLC) 4 formed in a silicon substrate 6. A “bare” optical fiber (page 5, par. 0082) extends from a through hole 20 in the ferrule 16 and lies on a flat, cut portion of the ferrule. In each embodiment, the ferrule 16 is fixed to the silicon substrate so that the fiber 22 is sandwiched between the ferrule 16 and the silicon substrate 6 (*see, e.g.,* FIGS. 2 and 3).

Although the office action acknowledges that the Nobuhara published application does not disclose a Bragg diffraction grating formed in the protruding part of the optical fiber, the Office action alleges that it would have been obvious to include such a grating in view of the Kato et al. patent. Applicant respectfully disagrees.

Although the Kato et al. patent discloses a Bragg grating near the tip of the fiber (col. 3, lines 21-31), a person of ordinary skill would not have been motivated to incorporate such a grating into the fiber disclosed in the Nobuhara published application. As mentioned above, in the embodiments disclosed in the Nobuhara published application, the ferrule 16 is fixed with adhesive to the silicon substrate so that the fiber 22 is sandwiched between the ferrule 16 and the silicon substrate 6. If a Bragg grating were formed on such a fiber, the arrangement would result in the same type of problems mentioned at pages 1-2 of the pending specification:

An optical fiber having a Bragg diffraction grating formed therein is firmly fixed to a mounting member such as a ferrule by applying an adhesive between the part of the optical fiber that is located within the ferrule and the interior walls of the ferrule. In such a case, when the optical fiber is secured to the ferrule, *such securing causes stress directly on the optical fiber, particularly at the area where a Bragg diffraction grating has been formed, and such stress changes the reflective characteristic of the Bragg diffraction grating.*

Therefore, one of ordinary skill would not have been motivated to provide a Bragg grating on the fiber 22 of the Nobuhara published application for use as an optical wavelength filter because of such problems (*i.e.*, the changes in the reflective characteristics of the Bragg grating caused by stresses as a result of securing the fiber between the ferrule 16 and the silicon substrate 6).

Indeed, although the Nobuhara published application discloses the use of optical wavelength filters, none of the embodiments suggests using a Bragg grating formed on the fiber. Instead, possibly in recognition of the problems discussed above, the Nobuhara published application specifically discloses techniques other than the use of a Bragg grating for selecting an optical wavelength. For example, several embodiments in the Nobuhara published application incorporate an optical wavelength filter in the optical waveguide layer 8 on the silicon substrate

6 (*see, e.g.*, pars. 0105, 0107). Other embodiments include a thin-film optical wavelength filter 84 in the optical module 70 (*e.g.*, FIG. 16; pars. 0013-0016, 0019).

Therefore, although the Nabuhara patent publication discloses the use of various optical wavelength filters, using a Bragg grating on the fiber would cause more problems that it might address. Thus, there is no "clear and particular" suggestion or motivation for incorporating a Bragg grating into the fiber of the Nobuhara published application so as to obtain the subject matter of the pending claims.

In view of the foregoing remarks, applicant respectfully requests reconsideration and withdrawal of the rejections.

In the restriction requirement, claims 1, 2, 6 and 10-12 were identified as generic. If any of those claims is allowed, applicant requests consideration (and allowance) of the claims directed to a non-elected species.

It is believed that all of the pending claims have been addressed. However, the absence of a reply to a specific rejection, issue or comment does not signify agreement with or concession of that rejection, issue or comment. In addition, because the arguments made above may not be exhaustive, there may be reasons for patentability of any or all pending claims (or other claims) that have not been expressed. Finally, nothing in this paper should be construed as an intent to concede any issue with regard to any claim, except as specifically stated in this paper, and the amendment of any claim does not necessarily signify concession of unpatentability of the claim prior to its amendment.

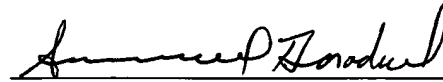
Applicant : Yoshiki Kuhara
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Respectfully submitted,

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Samuel Borodach
Reg. No. 38,388

Fish & Richardson P.C.
Citigroup Center
52nd Floor
153 East 53rd Street
New York, New York 10022-4611
Telephone: (212) 765-5070
Facsimile: (212) 258-2291